2005-06 Idaho 4th Grade Direct Mathematics Assessment

Effective problem-solving strategies

4th GRADE
MAIN RANGEFINDER
3

Your teacher will read the entire test to you before you begin.
Do not use a calculator on this assessment.

1. The fourth grade class opened a store at school. They had 25 notebooks, 62 erasers, 104 rulers, 19 pens, and 1,204 pencils.

a. How many total items did the fourth grade class have that they could sell? *Show or explain how you found your answer.*

You add all of the things the class can sell.

25 notebooks
62 erasers
104 rulers
19 pens
1,204 pencils
1,414 alltogether

1,414 things to sell

b. The students need three times as many erasers as the store has on the shelf. How many erasers do the students need? *Show or explain how you found your answer.*

62 + 62 + 62 = 186 = erasers

62 × 3 = 186

Proficient application of basic skills;
Well-defined structure

186 erasers

62 erasers × 3 = 186 erasers

c. A teacher bought 25 rulers from the school store. How many rulers were left? *Show or explain how you found your answer.*

104 to start with
− 25 to take away
79

Proficient application of basic skills

79 erasers

d. Five students came to buy the 25 notebooks. Each of the five students got the same number of notebooks. How many notebooks did each student buy? *Show or explain how you found your answer.*

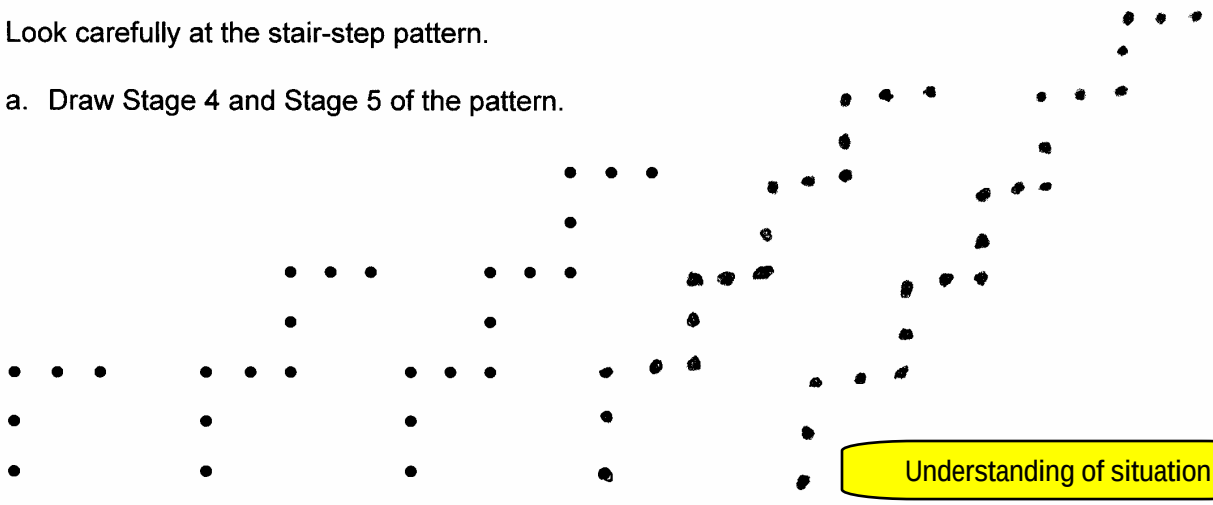
25÷5=5 5×5=25

Each child will get 5 notebooks

Read problems 2, 3, 4, and 5 on this and the next two pages.
Select three problems to answer. Answer ALL of the parts of the three problems you select to answer.
Cross out the one problem that you do not choose to answer.

2. Look carefully at the stair-step pattern.

a. Draw Stage 4 and Stage 5 of the pattern.



Stage 1 **Stage 2** **Stage 3** **Stage 4** **Stage 5**

Understanding of situation

b. Complete the chart below showing the total number of dots in each stage.

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
Number of Dots	**5**	**9**	13	17	21

c. If this pattern continues, how many dots will be in Stage 10? *Show or explain how you found your answer.*

Adaptable processes

41 dots

$4 \times 5 = 20$ $20 + 21 = 41$

21 dots in stage 5
4 to go to next stage
4 to go to next stage
4 to go to next stage
4 to go to next stage
4 to go to next stage
41 dots

d. Explain the rule for the number pattern you see.

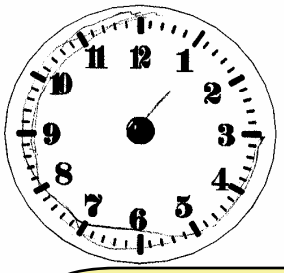
If you subtract 9 dots (that are in stage 2) and subtract 5 dots (in stage 1) you will get 4 as the rule.

5 + 4 = 9

4 is the rule

3.

Cinema 6 Movie Theater		
1st	movie begins at	12:15 PM
2nd	movie begins at	12:30 PM
3rd	movie begins at	12:45 PM
4th	movie begins at	1:00 PM
5th	movie begins at	1:15 PM
6th	movie begins at	1:30 PM



Occasional computational errors

a. How much time is between the start of the first movie and the start of the sixth movie? *Show or explain how you found your answer.*

In between the first movie and the sixth movie is 1 hour because each movie is 15 min apart.

b. If the third movie lasts 2 hours and 15 minutes, what time will it be when the movie finishes? *Show or explain how you found your answer.*

3:00 It will end at 3:00 because you just add 2 hours and 5 min to 12:45, that when the movie starts.

c. A family wants to go to the fifth movie. They live 40 minutes from the theater. What time will they need to leave home to get to the theater on time? *Show or explain how you found your answer.*

12:05 pm

they will have to leave at 12:05 pm because in 40 min it will be time for the movie.

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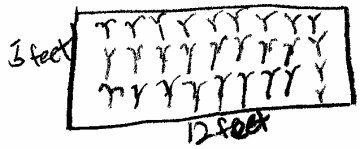
4. Mrs. McNeal is going to plant her garden. She wants to make it 12 feet long and 5 feet wide.

a. **Draw** a picture or a diagram of her garden. **Label** the measurement of each side.



Effective communication

b. What is the geometric shape of the garden? Explain what makes it that shape.

It is a rectangle because 5 feet is shorter than 12 feet so one side is longer then the other.

c. What is the perimeter of Mrs. McNeal's garden? *Show or explain how you found your answer.*

The perimeter is 34 feet.

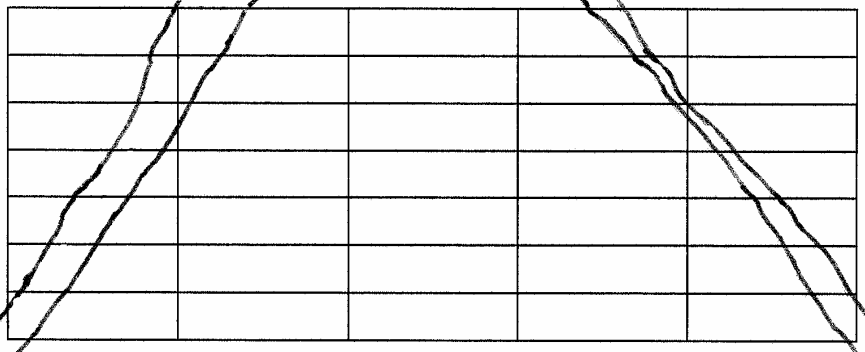
Effective mathematical vocabulary

5. Andre asked his teammates to choose their favorite kind of cookie. Their choices are listed below:

Teammate	Favorite Cookie	Teammate	Favorite Cookie
Pete	chocolate chip	Ryan	chocolate chip
Cory	peanut butter	Danny	oatmeal
Bob	oatmeal	Chris	ginger
Jack	chocolate chip	Tom	sugar
Josh	peanut butter	Bill	peanut butter
Steve	ginger	Tony	chocolate chip
Mike	chocolate chip	Kayd	chocolate chip
Matt	chocolate chip	Payton	peanut butter
Shawn	sugar	Sam	ginger

a. How many teammates chose each kind of cookie? *Show or explain how you found your answer.*

b. Make a graph to show how many teammates chose each kind of cookie. **Label** the graph.



c. Write **two** things you learned about the cookie choices by looking at the graph.